

5           What is claimed is:

1. An enhanced nanocomposite comprising of:

additives selected from the group of electrides and alkalides having an average particle size of from about 1 nanometer to about 1 micron; and

10           a conductive medium selected from the group of carbon products, monomers, polymers, organometallics, and combinations thereof.

2. The conductive medium according to claim 1, wherein the medium is a nanocomposite having an average particle size of from about 1 nanometer to about 1 micron.

3. The conductive medium according to claim 2, wherein the medium is functionalized with a nanoscale layer having an average thickness of from about 1 nanometer to about 100 nanometers.

15           4. The electrides and alkalides according to claim 1 are surface modified, complexed or functionalized with nanoscale layer selected from the group consisting of metals, metal oxides, organometallics, semiconductors, alloys, carbon products, and combinations thereof, the powder having a nanoscale layer having an average thickness of from about 1 nanometer to about 100 nanometers.

5. The enhanced nanocomposite according to claim 1, wherein the nanocomposite is subjected to a phonon or electron bias as induced by externally generated fields, whereby the externally generated fields include fields generated from the group of ultrasonic, acoustic phonon, magnetic, electromagnetic, and electrical fields.

25           6. The enhanced nanocomposite according to claim 4, wherein the nanocomposite is comprised of alternating layers of nanocomposite doped with conductive additives, and nanocomposite doped with semiconductor additives.

7. An enhanced colloidal solution comprising of:

additives selected from the group of electrides and alkalides having an average particle size of from about 1 nanometer to about 1 micron; and

30           a quantum energy transfer solution that further increases the mean free path of electrons, phonons, and photons.

- 5           8. The quantum energy transfer solution according to claim 7, wherein the solution contains additives selected from the group of carbon products, monomers, polymers, organometallics, and combinations thereof.
- 10          9. The quantum energy transfer solution according to claim 7 is functionalized for at least one purpose selected from the group promoting dispersion, enhancing corrosion resistance, enhancing chemical stability, enhancing molecular polarity, modifying hydrophobic or hydrophilic characteristics, enhancing solubility, providing stability against thermal and ultraviolet degradation, incorporating nucleating agents, enhancing means to make emulsions, and enhancing thermal or electrical conductivity.
- 15          10. The quantum energy transfer solution according to claim 7 is further comprised of additives having a surface modified nanoscale layer including surface modifications to functionalize for at least one purpose selected from the group promoting dispersion, enhancing corrosion resistance, enhancing chemical stability, enhancing molecular polarity, modifying hydrophobic or hydrophilic characteristics, enhancing solubility, providing stability against thermal and ultraviolet degradation, incorporating nucleating agents, enhancing means to make emulsions, and enhancing thermal or electrical conductivity.
- 20          11. The colloidal solution according to claim 7 is further comprised of surfactant wherein the interfacial tension of the additives is reduced.
- 25          12. The colloidal solution according to claim 7 is further comprised of quantum dots wherein the flow of electrons and phonons is further enhanced by effectively reducing the mean path length between said additives according to claim 11.
- 30          13. The colloidal solution according to claim 7, wherein the colloidal solution is subjected to a phonon or electron bias as induced by externally generated fields, whereby the externally generated fields include fields generated from the group of ultrasonic, acoustic phonon, magnetic, electromagnetic, and electrical fields.
14. The colloidal solution according to claim 7 is further comprised of solvated electron solution having features including increased availability of free electrons.
15. The colloidal solution according to claim 7 is further comprised of self-assembly additives having features including self-assembly of nanolayers, monolayers, and nanoclusters.

- 5 16. The self-assembly additives according to claim 16 include additives functionalized for increased polarity, and increased hydrophobic or hydrophilic characteristics, and block copolymers.
17. Products are made from enhanced nanocomposite according to claim 1.
- 10 18. The products according to claim 17 are further subjected to a phonon or electron bias as induced by externally generated fields, whereby the externally generated fields include fields generated from the group of ultrasonic, acoustic phonon, magnetic, electromagnetic, and electrical fields.
- 15 19. The products according to claim 17 wherein said product is further selected from the group of energy conversion products selected from the group of thermionics, thermoelectric, photovoltaic, fuel cell, piezoelectrics, photoelectrics, ballistic tunneling, thermal diodes; and photon, electron, and photon emitters.
20. Products are made from enhanced colloidal solutions according to claim 7.
- 20 21. The products according to claim 20 are further subjected to a phonon or electron bias as induced by externally generated fields, whereby the externally generated fields include fields generated from the group of ultrasonic, acoustic phonon, magnetic, electromagnetic, and electrical fields.
- 25 22. The products according to claim 20 wherein said product is further selected from the group of energy conversion products selected from the group of thermionics, thermoelectric, photovoltaic, fuel cell, piezoelectrics, photoelectrics, ballistic tunneling, thermal diodes; and photon, electron, and photon emitters.